AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) A method for management of a dynamic range of a radiological image comprising:

acquiring an image of an object with a radiology apparatus having a detector and a source of radiation, the image thus acquired possessing a wide dynamic range of acquisition;

computing an image of radiological thicknesses of the object from the acquired image;

filtering the image of the radiological thicknesses to obtain a context image;

subtracting the context image from the image of the radiological thicknesses to obtain an image of the details;

processing the context image by means of a first table computed from the image of the radiological thicknesses to obtain an image with a reduced dynamic range;

processing the context image by means of a second table computed from the image of the radiological thicknesses to obtain an image of coefficients which will then weight the image of the details to obtain an image of enhanced details;

adding together the image with reduced dynamic range and the image of the enhanced details to obtain an image with reduced dynamic range and heightened contrast in which the differences between structures of the object are preserved;

converting ~~compressing~~ the dynamic range of the image with reduced dynamic range and heightened contrast by compressing the image with a third table to produce one image signal per pixel, wherein the size of said image signal corresponds to a ~~so that it is~~

~~contained within~~ dynamic range of an imaging device with a small dynamic range, this small dynamic range of the imaging device being smaller than the wide dynamic range of the acquired image, thereby permitting an acquired image originally having a wide dynamic range to be displayed with heightened contrast on an imaging device having a smaller dynamic range;

determining a threshold based upon a histogram of the object in the image of the radiological thicknesses; and

defining segmented regions of the object based upon the threshold wherein said segmented regions are less than the whole object.

2. (previously presented) The method according to claim 1 wherein:

to obtain the image of the enhanced details, the image of the details is weighted, pixel by pixel, by an image of coefficients, the values of the coefficients being a positive function of the values of the context image at the position of the signals of the context image.

3. (previously presented) The method according to claim 1 wherein:

the context image is built from the image of the radiological thicknesses by a median filtering.

4. (previously presented) The method according to claim 2 wherein:

the context image is built from the image of the radiological thicknesses by a median filtering.

5. (previously presented) The method according to claim 1 wherein:

a function applied to each pixel of the context image to obtain the image with reduced dynamic range is positive, linear by pieces and non-decreasing and/or the coefficients which, in each pixel, multiply the detail image to obtain the image of the enhanced details are computed by applying a positive function, that is constant by pieces,

to each pixel of the context image, the coefficients being smaller than 1 if the contrast at their position has to be reduced, equal to 1 if the contrast at their position has to be kept as it is and greater than 1 if the contrast at their position has to be heightened.

6. (previously presented) The method according to claim 2 wherein:

a function applied to each pixel of the context image to obtain the image with reduced dynamic range is positive, linear by pieces and non-decreasing and/or the coefficients which, in each pixel, multiply the detail image to obtain the image of the enhanced details are computed by applying a positive function, that is constant by pieces, to each pixel of the context image, the coefficients being smaller than 1 if the contrast at their position has to be reduced, equal to 1 if the contrast at their position has to be kept as it is and greater than 1 if the contrast at their position has to be heightened.

7. (previously presented) The method according to claim 3 wherein:

a function applied to each pixel of the context image to obtain the image with reduced dynamic range is positive, linear by pieces and non-decreasing and/or the coefficients which, in each pixel, multiply the detail image to obtain the image of the enhanced details are computed by applying a positive function, that is constant by pieces, to each pixel of the context image, the coefficients being smaller than 1 if the contrast at their position has to be reduced, equal to 1 if the contrast at their position has to be kept as it is and greater than 1 if the contrast at their position has to be heightened.

8. (previously presented) The method according to claim 1 wherein:

the compressing of the dynamic range is obtained by a positive and non-decreasing function, characterized by two parameters adjustable by a user, a parameter that controls the maximum differential gain, and a parameter which defines a level of maximum differential gain in a basic dynamic range.

9. (previously presented) The method according to claim 2 wherein:

the compressing of the dynamic range is obtained by a positive and non-decreasing function, characterized by two parameters adjustable by a user, a parameter that controls the maximum differential gain, and a parameter which defines a level of maximum differential gain in a basic dynamic range.

10. (previously presented) The method according to claim 3 wherein:

the compressing of the dynamic range is obtained by a positive and non-decreasing function, characterized by two parameters adjustable by a user, a parameter that controls the maximum differential gain, and a parameter which defines a level of maximum differential gain in a basic dynamic range.

11. (previously presented) The method according to claim 4 wherein:

the compressing of the dynamic range is obtained by a positive and non-decreasing function, characterized by two parameters adjustable by a user, a parameter that controls the maximum differential gain, and a parameter which defines a level of maximum differential gain in a basic dynamic range.

12. (previously presented) The method according to claim 8 wherein:

the operations of processing the images of context and the images of the details are modified as a function of the value that controls the maximum differential gain selected by a user.

13. (previously presented) The method according to claim 2 wherein:

the operations of processing the images of context and the images of the details are modified as a function of the value that controls the maximum differential gain selected by a user.

14. (previously presented) The method according to claim 3 wherein:

the operations of processing the images of context and the images of the details are modified as a function of the value that controls the maximum differential gain selected by a user.

15. (previously presented) The method according to claim 4 wherein:

the operations of processing the images of context and the images of the details are modified as a function of the value that controls the maximum differential gain selected by a user.

16. (previously presented) The method according to claim 1 wherein:

computations of two functions used to modify the images of context and of the details are predefined as functions of proportion of object structure, and are adapted by a calibration procedure to each radiological thickness image.

17. (previously presented) The method according to claim 2 wherein:

computations of two functions used to modify the images of context and of the details are predefined as functions of proportion of object structure, and are adapted by a calibration procedure to each radiological thickness image.

18. (previously presented) The method according to claim 3 wherein:

computations of two functions used to modify the images of context and of the details are predefined as functions of proportion of object structure, and are adapted by a calibration procedure to each radiological thickness image.

19. (previously presented) The method according to claim 4 wherein:

computations of two functions used to modify the images of context and of the details are predefined as functions of proportion of object structure, and are adapted by a calibration procedure to each radiological thickness image.

20. (previously presented) The method according to claim 8 wherein:

computations of two functions used to modify the images of context and of the details are predefined as functions of proportion of object structure, and are adapted by a calibration procedure to each radiological thickness image.

21. (previously presented) The method according to claim 12 wherein:

computations of two functions used to modify the images of context and of the details are predefined as functions of proportion of object structure, and are adapted by a calibration procedure to each radiological thickness image.

22. (canceled)

23. (previously presented) The method according to claim 1 further comprising:

based upon the defined segmented regions of the object, computing coefficients which, in each pixel, multiply the detail image to obtain the image of enhanced details, by applying a positive function, that is constant by pieces, to each pixel of the context image.

24. (original) The method according to claim 23 wherein said segmented regions define an adipose and a fibro-glandular regions.

25. (original) The method according to claim 24 further comprising:

choosing a function for said coefficients that is constant by pieces; and,

using different coefficients of expansion for said adipose and fiber-glandular regions respectively.